

IAF SPACE EXPLORATION SYMPOSIUM (A3)
Mars Exploration – missions current and future (3A)

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EMIRATES MARS MISSION (EMM) COMMAND AND DATA HANDLING DESIGN OVERVIEW

Abstract

Emirates Mars Mission program is responsible for the definition, design, development, integration, and test of the spacecraft that orbits Mars. The spacecraft provides the capabilities required to achieve and maintain the Mars orbit post-launch, supply the payloads, which are: • The Emirates eXploration Imager, an instrument that is dual-channel spectral imager capable of producing full-disk, 12.6 megapixel images of Mars in 6 spectral bands. • The Emirates Mars InfraRed Spectrometer, this instrument is a Fourier transform spectrometer based on a Michelson 2-port design. • The Emirates Mars Ultraviolet Spectrometer, an instrument that is an imaging spectrograph that measures emission from the Mars atmosphere and corona in the spectral range 100-170 nm. To ensure we have a successful mission, the CDH subsystem is designed to be a high performance flight computer system within EMM bus. The CDH system is responsible for overall control and telemetry gathering from the spacecraft bus in addition to interfacing to all the three payload electronics. A CDH unit consist of cards and housing mechanics necessary to support the operation of the spacecraft bus.